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HOME ECONOMICS COURSES AND THE HIGHER INSTITUTIONS OF LEARNING

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In any new field of education the line of demarcation between the parts of the subject which shall be administered in the various grades of schools, primary, secondary, and collegiate, is necessarily vague and shifting. Until the facts and processes worth teaching are thoroughly agreed upon, much that is useless, inefficient, and redundant will be dispensed in all of these schools and will be repeated *ad nauseam* from grade to grade. In no field has this been more strikingly illustrated than in that of home economics, and in none as yet has it been less successfully solved.

Because of the obvious social value of the object of home economics education its exponents have been able to secure the acceptance of any scheme for the accomplishment of that object which the fancy of the moment dictated. Many of these schemes, for example, the practice house, the catering and lunch-room commercialized class, the college cooking class, plainly of questionable educational value, have been enthusiastically tried in many places. In time such valueless schemes fall of their own weight, and sound devices take their place.

THE DIVISION OF THE WORK IN THE SCHOOL SYSTEM

Among other questions confronting those who must solve problems of home economics education stands out prominently that of the assignment of the type and grade of work to be given under this name in the various schools. Not unnaturally in the beginning each home economics teacher assumed that her students were utterly untrained no matter where she found them, and so began at the beginning. Thus a girl might well find herself repeating almost exactly the same lessons in grade school, high school, normal school, college, or university. The excuse for this condition no longer exists, particularly in states which, like California, offer home economics instruction in nearly all the public schools. An orderly gradation or division of such instruction is surely necessary now if never before. It should no longer be possible for a bright student to complain, as one recently did to the writer, that she had had to test for starch with iodine in every food and science class she had been in from the fifth to the twelfth grade. One wonders whether any of this unfortunate child's teachers had added anything in the way of explanation, parallel, or use to the empirical fact thus established.

In the present article only the so-called household science courses are dealt with, partly because of the writer's familiarity with them, but chiefly because of their relative definiteness. Studies usually listed under household art share with other art courses a certain difficulty of division in subject-matter distinct from acquisition of skill. No detail is given in the present paper for the household science subjects as taught in primary and secondary schools, the discussion being concerned only with the distinctive features of such work in the higher institutions. Less attention so far appears to have been given to this latter phase of instruction in home economics.

THE EDUCATIONAL JUSTIFICATION OF HOME ECONOMICS INSTRUCTION

From the beginning no one disputed the wisdom or desirability of the training of girls in the technique of home duties. The question raised was rather as to the best time and place for such instruction and as to its educational status. In the days, perhaps too conclusively past, when so-called cultural subjects were considered the only possible content of high-school and college curricula, and Latin grammar and geometry were taught for the avowed purpose of inculcating accuracy, thoroughness, perseverance, and various other stern virtues in the student, practice in cookery or sewing was a pariah, a mere mechanical process of no educational worth. Our fashion in pedagogical psychology has changed, however, and we begin to believe that accuracy, observation, and thoroughness cannot be acquired in one field and carried over into all others at will. Perhaps our interpretation of the object of an expensive and elaborate system of public education has also changed. The modern tendency is to expect direct and practical results, applicable to every situation and problem of living, from these years of instruction.

BALANCE BETWEEN PRINCIPLES AND PRACTICE

Whether these two conceptions of the object of schooling are antagonistic is an open question. Formerly education was said to prepare one for understanding and enjoying everyday sensations, for broadening the consciousness and extending the threshold of self backward through history, art, and ancient literature, forward through philosophy, poetry, and economics, and horizontally through science and mathematics. Now we expect this same breadth of vision, this same expanded self, to be developed through the history, art, economics, mathematics, and science involved in the study of a specific profession. Is there any real discrepancy in the two views? It is surely quite as possible for a girl to attain a scientific horizon by the properly directed study of the leavening effect of baking powder as by the study of the neutralization of sodium bicarbonate by potassium hydrogen tartarate, and of the rusting of iron and the tarnishing of silver as the oxidation of iron or the formation of silver sulfide.

The crux of the matter is no longer here, however, but in the vexed and misunderstood question of the adjustment of principles and application. If we are to train our students for usefulness in a particular field, we must give them information and practice in that field for the bald purpose of routine use. For instance, the dietitian must know certain facts about food values; she must have a reasonable amount of dexterity in handling cooking utensils; she must have an inkling at least of the modified diet used in abnormal conditions. These points she may get without the slightest understanding of the fundamental laws of nutrition, or of the chemistry of foods.

But skill with the tools of the trade and a glib familiarity with its current information make neither an educated individual nor an efficient workman. Beneath this must be underlaid an understanding of fundamental principles, developed judgment, independence of reasoning, and, in so far as it is humanly possible, a trace of that rarest and most precious quality of all, productive originality. Perhaps an example will illustrate the tremendous gulf between these two methods of training for a profession. Analytical chemists, able to work with the most amazing accuracy and rapidity, are trained in the routine laboratories of some of the large factories. These men and women, taken from the office-boy class, in a few years acquire the dexterity necessary to the performance of all the analyses required in their particular laboratories. The head chemist and supervisors, however, are men trained in the universities. The office-boy chemist works well as long as no hitch in the process occurs, but is entirely useless when a new chemical problem obtrudes itself.

That the pendulum of educational fashion is swinging us dangerously close to the office-boy-chemist type of training is becoming increasingly apparent. Yet the criticism may justly be made that the enormous majority of our fellow-citizens are and must remain of the office-boy class of attainment. The grade school and even the high school must give much, if not most, of their time to the imparting of routine dexterity and information, if the years spent in them are to be considered direct preparation for the "job" of life.

Analysis of the curricula of even the most conservative of the old-fashioned academies will reveal that unconsciously this very thing was done. Enough Latin and Greek were taught to make it possible for the student in after years to puzzle out the etymology of a new English word; enough English and foreign literature to make the reading of the daily newspaper, the new novel, the literary magazine, a pleasure; enough physics to regulate the ice box, to explain the rainbow, or to set up the electric bell. Granted that secondary education must contain much that is frankly utilitarian, if the newer conception of education is to prevail, we have to consider the position of the college and the university in this respect. What proportion of time and emphasis shall application receive in these institutions as opposed to what is clumsily called theory?

HOME ECONOMICS AS VOCATIONAL EDUCATION

If we confine our discussion to the field of home economics, the matter will at least be more limited, if not simpler. The fundamental notion underlying the introduction of home economics into the educational system is that home-making is the exclusive life-job of a very large majority of women. If this be granted, it simplifies tremendously the vocational training of girls in the grade and high schools. If 90 per cent of all schoolgirls are to be prepared for the same kind of work, that preparation can easily be made thorough, efficient, and economical from the point of view of the schools. As a matter of fact, this easy solution of the education of girls is no longer tenable, since women have taken on a wage-earning ambition and capacity, and home-making continues to be wageless. In the end this latter objection is seen to be only apparent, however, and not real, for after a few years of such wage-earning most women slip into their age-old wageless job in the home. This last statement is more particularly true of the great army of girls who go no farther than the eighth grade, and the lesser but still enormous number who drop out in the high-school years.

THE PURPOSES OF STATE-PROVIDED HIGHER EDUCATION

Where can the dividing line be drawn, then, between the acquisition of dexterity and the acquisition of a specialist's judgment? If such a line must be drawn, it must surely be found in the distinctive character and purpose of the college or university. The separation of the grade- and high-school field and spirit of teaching home economics from the field and spirit of the university home economics course should be quite as distinct as that between the casual hygiene course of the high school and the physiology and pathology work of the medical school. If the college and university degrees are to have a continued significance under our newer system of education, they must stand for knowledge of principles and the power to apply them to specific problems, rather than the parrot-like acquisition of ready-made applications. In home economics above all other subjects should this differentiation be carried out, if useless duplication and waste of time are to be avoided. If we consider the function of the state universities in particular to be primarily the production of specialists, in other words professional men and women, we must either confine the work of these institutions in home economics to a specialized scientific group of courses, or, acknowledging that the secondary schools are not performing their task efficiently, we must present secondary-school work in addition. Surely the purpose of the state is the provision of instruction in the routine duties of the home and family to the girls in the primary and secondary schools. That the very small percentage of the total feminine citizenship who are able to avail themselves of university advantages should be equipped by the state with special thoroughness for the management of their individual homes seems an unfair distribution of public expenditure. This special adeptness in the individual home-making should be considered the desirable by-product of the training rather than the avowed object. The graduate of a university home economics course should be a specialist equipped with the technique and the responsibility of the professional woman. Thus she may carry on the work of enlightenment as a teacher of cooking, sewing, etc., in the primary and secondary schools, as a leader of home economics study among the older women of her community through the clubs, as a dietitian in hospitals or other institutions, as a social worker, an experiment station research worker, or in any one of half a dozen other ways. The main point is that she must be the head chemist, so to speak, of the whole feminine home-making works, to whom the office-boy routine analysts may go for instruction and for direction in emergencies.

PROFESSIONAL, RATHER THAN VOCATIONAL, COURSES

This conception of the function of the university home economics training necessarily modifies not only the curriculum presented to the four-year student but also the character and the content of the courses themselves. If ready-made applications of scientific principles to domestic matters are to give way to technical study of the principles themselves followed by individual applications, such courses as the so-called "Domestic Chemistry," "Household Chemistry," "Home Economics Chemistry," "Physics of the Household," "Economics of the Household," in so far as they take the place of fundamental training in the respective sciences, should be dropped from the curricula of colleges and universities. These courses are only too often purely descriptive, categorical, uninspired, and baldly informational. In the secondary schools in some cases they may be made satisfactory and desirable substitutes for the usual mechanical grind of memory and arithmetic which make up so much of the science work. From the university point of view, however, it is questionable whether such applications, particularly in chemistry, can be made profitable unless preceded by at least two or two and one-half years of fundamental general work in the science. Fortunately the tide of popularity of these sugar-coated doses of science seems to be on the wane, and the sentiment is more general that applied science is only a waste of time, unless the student has first acquired a reasonable familiarity with the science to be applied.

"RELATED" SCIENCE AND ART COURSES

At this point it may not be irrelevant to mention the interpretation which has been offered in federal-controlled vocational education as to the place in the curriculum and the mode of teaching of these fundamental science and art courses. The principles to be taught are to be relegated to comparative obscurity in order that their obtrusion may not distract the student from the vocational applications, nor may those applications assume a broader field than that contemplated by the student at the moment. It is difficult to comprehend the specific object of such limitations in view of the large amount of time usually assigned to work in vocational technique. Some of these technical lessons might surely be enriched and rendered more effective and teachable by inclusion of just such explanations, leaving the general truths to be taught in the related science and art courses.

FOOD COURSES AS APPLIED SCIENCE

The claim of cookery or food courses to a place in the collegiate curriculum must depend upon the equilibrium which they maintain between fundamentals and empiricism. It may be admitted that any cooking lesson may be made a lesson in applied chemistry, physics, or physiology. If such cooking lessons are of professional intent and university rank, they must represent only chemical, physical, and physiological principles already familiar or to be made familiar through the application. Since it is now considered good pedagogy to begin the study of a far-reaching truth by means of a specific application, the cooking lesson may be used to illustrate and vivify the process of scientific concentration. The difference again between the university and the secondary or present normal-school points of view, however, lies in the fact that in the former the study of the principle is emphasized in order that its every possible application to foods and cookery may be within the grasp of the student, while in the latter the applications are made as inclusive as is practicable, for the sake of their own individual value.

We have confused these two functions of advanced work in home economics almost inextricably. The insatiable appetite of the students for "explanations" of the common facts of food preparation and of nutrition, their impatience of theoretical drill, and their pathetic eagerness for authoritative and didactic statements on such matters combine to turn the food courses into descriptive memory tests no more worthy of the name of science than phrenology or faith healing.

KINDS OF FOOD AND NUTRITION COURSES OFFERED

The foods and nutrition courses offered in universities, colleges, and normal schools may be classified roughly as follows: (*a*) cookery; (*b*) food production and economics; (*c*) dietetics; (*d*) nutrition.

The definition and limitations of each of these four kinds of courses are easily worked out.

Cookery courses.—The cookery courses include for the most part the Freshman work and usually consist only of manipulation and more or less of descriptive material of the character included under the second heading. It is perhaps possible for such work to be standardized so as to maintain its place in the college curriculum, in case correlation with required high-school work cannot be made practicable. The fact remains that such standardization has not been carried out, and that the usual college Freshman or normal-school cookery course, no matter what it is called, and, unfortunately, no matter what the prerequisites for it may be, is only an extended high-school course. The answer to this criticism that the same remark holds true of chemistry, physics, and mathematics courses is not entirely adequate if we remember the fundamental difference between pure science and applied science or manual arts.

Food economics courses.—The second class of food courses, those dealing with food economics and production, is fairly uniform. In so far as they consist of lectures and recitations, they seem to be of the same grade and nature as lower division descriptive courses in botany, geography, or history. Wherever laboratory work other than field trips accompanies these courses, it is ordinarily more cooking. The field trips, consisting of inspection excursions to factories, bakeries, markets, etc., constitute a pleasing variation for the students as well as an excellent pedagogical device. In this work a connection is made between the field of economics and that of chemistry and nutrition. The nature of the ground covered insures a more or less constant character and content of these courses. Meat, milk, cheese, eggs, vegetables, cereals, and fruits are the usual headings; and production, preservation, or adulterations, manufacture, sale, and uses are the subheadings. Not uncommonly these first two classes of courses, cookery and food economics, are found combined as laboratory and lecture work respectively in a single course. In 90 per cent of the twenty-one colleges of agriculture investigated by the writer some four years ago such courses carried either no prerequisites other than cookery, or not more than one year of chemistry.

Dietetics courses.—The third class of courses, called dietetics, is perhaps the most interesting of all, since its scope can be so easily made quite definite. The character of the preparation required of the student before she enters upon this course is exceedingly varied. In some cases no prerequisite at all is mentioned; in others, only home economics courses; in the majority, two years of chemistry are required, and usually also one or more terms of physiology or bacteriology. In certain cases so many and so varied are the prerequisites that one wonders what is left to be given under the heading of dietetics besides arithmetical practice in the calculation of dietaries. The economic and aesthetic phases of the work, as well as the consideration of various normal conditions of nutrition, may easily be spread out over a great deal of time without adding materially to the equipment of the student.

If the prerequisites, as well as the scope of a reasonable course called dietetics, could be agreed upon, much useless repetition could be avoided and a more rapid progress made toward standardization of the whole food and nutrition question. The first step in such an agreement should be as to the content of the course itself, rather than as to the number and kind of prerequisites. The latter must inevitably present themselves from a consideration of the former.

Nutrition courses.—The fourth class of instruction, grouped under the general heading nutrition, includes the advanced courses following the dietetics course, or in some cases just preceding it. Only a few institutions offered such work, six out of the twenty-one universities and colleges examined. The tendency in this class is toward metabolism work, feeding experiments, or more frequently seminar reading on modern nutrition topics. The number of students who avail themselves of these courses is small, and the total amount of such work offered is unambitious in view of the openness of the field for the training of experiment station and medical research workers along these lines which should be peculiarly attractive to women.

TWO-YEAR COURSES ONLY NECESSARY

All of the valuable material spread out in these courses, when preceded by well-regulated high-school work in foods and by properly chosen high-school and junior-college work in the pure sciences, may be administered in two-year courses given during the third and fourth years in the higher institution. One of these, food economics and analysis, should deal with all the questions of scientific and rational import concerned in the manufacture, control, and preparation of food for the market and for the table. Limitation to the problems of the housewife should be avoided, and the larger and more professional aspects of this work considered. The other course should cover the field of nutrition and its applications in the feeding of the race. Obviously, neither of these courses could be profitably offered to students in the junior college without impairing their professional value, since the foundations in chemistry, physics, physiology, and bacteriology must be laid during those years.

A well-known nutrition investigator asked me not long ago if I understood the psychology of that increasing number of young women who plunge into pseudo-research work without adequate preparation. I believe that at least one of the predisposing causes must be the scattering and misleading character of their home economics work in foods. Students are given, and asked to make, applications of physical chemistry when physical chemistry is scarcely a name to them. They deal with the chemistry of proteins and carbohydrates when they know nothing of the simplest laws and reactions of organic chemistry. It is undoubtedly unfortunate that the chemistry of foods and of nutrition should be among the most complicated chemical problems with which the chemist has to deal, but the fact remains, and cannot be blinked nor avoided in anything savoring of a professional college course. If time must be curtailed, let it be the time devoted to multiplying applications and not that given to explanation of principles. Better that the home economics specialist, and this should include the high-school teacher, should be able to make only one kind of salad dressing and understand the properties and nature of emulsions, than be able to make five kinds of dressing and define an emulsion as a form of cod-liver oil.

NORMAL-SCHOOL COURSES IN HOME ECONOMICS

It is plain that the two-year normal-school course which forms now the standard preparation of the elementary-school teacher of home economics must follow for the most part the secondary-school type of training in home economics. All that can be hoped for from these students is a greater degree of expertness in technical operations and a larger store of ready-made scientific explanations and applications than the high-school graduate has accumulated. Since the teaching of home economics in the elementary schools is mainly a matter of practice in mechanical processes and so-called habit-forming in connection with domestic routine, possibly the normal-school course of the type mentioned may serve well enough for the elementary-school teacher. No one will maintain, however, that such training is the optimum, although it may be the best that can be provided in the time allowed.

THE THREE-YEAR NORMAL-SCHOOL COURSE IN HOME ECONOMICS

The writer is of the opinion that if three years be given to this training, as is now contemplated in some institutions, a better scheme than the present one may be worked out. The first two years of such a course might well be devoted to regular junior-college courses of fundamental character, dealing with the primacies of scholarship, particularly in the sciences. A small part of the student's time during this period, perhaps three to six hours a week, might be given to the usual technical operations of cooking, sewing, laundry, etc. During the third year practice-teaching methods, intensive practice in routine processes, and so-called applications of the previous training might be introduced.

With such a plan in operation the student would be in a position at the end of her second year to choose between finishing her elementary training or going on to a higher institution to continue her collegiate work and to become eventually a high-school teacher or other type of professional person. Some students would, of course, desire to do both, with an interval of grade-school teaching. The present plan of instruction of the elementary home economics teacher renders her first two years' work worthless if she should wish to continue her education in the manner indicated.

THE FOUR-YEAR NORMAL-SCHOOL COURSE IN HOME ECONOMICS

The four-year normal-school course for high-school teachers of home economics as now enforced and as recommended by some state boards of education for the normal schools is identical in character with the two-year course formerly mentioned but includes, in addition, a wider range of subjects and provides greater adeptness with the hands. Unfortunately, since there is no pretense at maintaining the logical sequence of fundamentals and applications, the fourth year of preparation often required for qualification for high-school certification in home economics merely enlarges the familiar applications and leaves the graduate efficient enough in certain directions, but still definitely and hopelessly in the office-boy analyst class. This use of the four years given to schooling by the ambitious student seems to the writer indefensible. Enough time is provided for the acquisition of such technique as may be needed for practice teaching and methods, and for the laying of the scientific foundations as well, if the course be wisely planned. But such a course has no place in the usual normal school because of the preponderance of work of less-advanced character which must be done in such schools. The faculty and equipment, usually of a type consonant only with the development of junior-college work or the usual elementary normal-school courses, are not adequate for senior-college and graduate problems. Even the four-year teachers' colleges cannot be expected to offer the best type of work during these years unless they form part of an institution containing well-developed pure science departments, and definitely co-ordinate their work with such departments.

THE HIGH-SCHOOL TEACHER OF HOME ECONOMICS

If the training of the high-school teacher is to be considered primarily the training of the specialist in the subject which is to be taught and secondarily the training in the method of teaching, then the normal-school preparation of high-school home economics teachers must be looked upon as inadequate. In most sections of the country this premise, already accepted for the academic subjects, has not been applied to "special" subjects. The list of special subjects usually includes art, music, physical education, and manual arts, as well as home economics. Agriculture was at one time quite generally placed in this list, and is still found there in some places.

The nature of the subject in home economics and agriculture is such as to allow the use of a large amount of scientific background in teaching and should certainly, in the high schools at least, not be limited to training in manual dexterity. One might coin a word, "scientiphobia," to express the extremes to which antagonists of this type of teaching have swung in recent years. Fear of the introduction of too much mental pabulum into the high-school curriculum seems to the writer unnecessary and unjustified by the history and present condition of these schools. The social and domestic preparation of the high-school student can only be strengthened by the scientific and general education of the teacher, since modern domestic problems can no longer be considered as chiefly manual. The all-important economic and scientific use of purchasing power can be taught successfully only by mature and well-balanced university-trained or educated teachers.

Actual housekeeping experience is indeed valuable for these teachers, but only when that experience has been acquired in an analytical manner and in the light of carefully adjusted scientific study. Such experience is not indispensable but may be considered in the majority of cases almost inevitable.

The preparation of the high-school or college teacher of home economics should cover a longer period under more rigorous control, instead of a shorter period, than that of the teacher of the academic or basic subjects. For the same reasons, the teacher of agriculture, engineering, or any other applied-science courses, should be given fundamental as well as applied training, a condition which demands a longer period of schooling. Five or six years should be spent on this training, instead of the four now grudgingly and in detached style accorded to it.

SEPARATION OF DOMESTIC ART AND SCIENCE

Note should be made here of a corollary to the adoption of such a plan of teacher training. Specialists of the type contemplated would necessarily remain applied-science specialists and could not include in their attainments the equally thorough artistic education necessary for the domestic-art teacher. The teaching of these subjects in the high school should be separated, although they should be kept in the same department and vivified by the same social object. The domestic-art classes might well be combined with the drawing or art work by the well-qualified art teacher, and the domestic science combined if necessary with other science courses in the schedule of the domestic-science teacher. Until such a separation is generally accomplished amateur or one-sided instruction will continue to be given.